# Contents of Volume 6


Number 1 - Abstracts

Number 2, JANUARY 1992

**The Impact of *The FASEB Journal*.** *W. J. Whelan* . . . . . 661

**Editorial**

Toward a Bold New Forum. *H. Metzger* . . . . . 662

**News & Features**

In Brief . . . . . 663

Special Feature: Survival strategies: alternate careers in science. . . 665

**Overview**

Cytochrome P450: advances and prospects. *F. P. Guengerich* . 667

**Reviews**

Cytochrome P450: progress and predictions. *M. J. Coon, X. Ding, S. J. Pernecky, A. D. N. Vaz* . . . . . 669

Cytochrome $P450_{cam}$: crystallography, oxygen activation, and electron transfer. *T. L. Poulos and R. Raag* . . . . . 674

Membrane topology of the mammalian P450 cytochromes. *S. D. Black* . . . . . 680

Mechanisms of cytochrome P450 and peroxidase-catalyzed xenobiotic metabolism. *P. F. Hollenberg* . . . . . 686

Mechanism-based probes of the topology and function of fatty acid hydroxylases. *P. R. Ortiz de Montellano, W. K. Chan, S. F. Tuck, R. M. Kaikaus, N. M. Bass, and J. A. Peterson* . . . . . 695

Analysis of the catalytic specificity of cytochrome P450 enzymes through site-directed mutagenesis. *E. F. Johnson, T. Kronbach, and M.-H. Hsu* . . . . . 700

Regulation of *CYP1A1* expression. *Y. Fujii-Kuriyama, H. Imataka, K. Sogawa, K.-i. Yasumoto, Y. Kikuchi* . . . . . 706

Hepatic steroid hydroxylating enzymes are controlled by the sexually dimorphic pattern of growth hormone secretion in normal and dwarf rats. *C. Legraverend, A. Mode, T. Wells, I. Robinson, and J.-A. Gustafsson* . . . . . 711

Distinct biochemical mechanisms for cAMP-dependent transcription of *CYP17* and *CYP21*. *U. M. Zanger, N. Kagawa, J. Lund, and M. R. Waterman* . . . . . 719

Oxidative and reductive metabolism by cytochrome P450 2E1. *D. R. Koop* . . . . . 724

Cytochrome P450 and the arachidonate cascade. *J. H. Capdevila, J. R. Falck, and R. W. Estabrook* . . . . . 731

Dietary effects on cytochromes P450, xenobiotic metabolism, and toxicity. *C. S. Yang, J. F. Brady, and J.-Y. Hong* . . . . . 737

Characterization of human cytochrome P450 enzymes. *F. P. Guengerich* . . . . . 745

**Research Communications**

Role of Glu318 and Thr319 in the catalytic function of cytochrome $P450_d$ (P4501A2): effects of mutations on the methanol hydroxylation. *K. Hiroya, M. Ishigooka, T. Shimizu, and M. Hatano* . . . . . 749

Effects of imidazole derivatives on cytochromes P450 from human hepatocytes in primary culture. *M. Maurice, L. Pichard, M. Daujat, I. Fabre, H. Joyeux, J. Domergue, and P. Maurel* . . . 752

High-level expression of functional human cytochrome P4501A2 in *Escherichia coli*. *C. W. Fisher, D. L. Caudle, C. Martin-Wixtrom, L. C. Quattrochi, R. H. Tukey, M. R. Waterman, and R. W. Estabrook* . . . . . 759

Role of cytochrome P450 in the oxidation of glycerol by reconstituted systems and microsomes. *L. A. Clejan and A. I. Cederbaum* . . 765

Cytochrome P450 isozymes catalyzing 4-hydroxylation of Parkinsonism-related compound 1,2,3,4-tetrahydroisoquinoline in rat liver microsomes. *T. Suzuki, S. Fujita, S. Narimatsu, Y. Masubuchi, M. Tachibana, S. Ohta, and M. Hirobe* . . . . . 771

Transcriptional derepression of the murine *Cypla-1* gene by mevinolin. *A. Puga, B. Raychaudhuri, and D. W. Nebert* . . . . . 777

Cytochrome P450 may regulate plasma membrane $Ca^{2+}$ permeability according to the filling state of the intracellular $Ca^{2+}$ stores. *J. Alvarez, M. Montero, and J. Garcia-Sancho* . . . . . 786

**Erratum** . . . . . 792

**50 Years Ago**

From Sulfanilamide to AZT. *C. Jelleff Carr* . . . . . 793

**Letters to the Editor**

Role of Set-point Theory in Regulation of Body Weight. *S. M. Garn* . . . . . 794

Author's Reply. *R. B. S. Harris* . . . . . 794

**Calendar** . . . . . 795

**Information for Authors** . . . . . 800

**Employment Opportunities** . . . . . 804

**New Products & Literature** . . . . . 808

Number 3, FEBRUARY 1992

**Editorial**

Medical Education: Capitalizing on the Lecture Method. *F. Vella* . . . . . 811

**Public Affairs**

Consensus Panel on NIH's 5-year Plan . . . . . 813

**News & Features**

In Brief . . . . . 821

Special Feature: Does it make you see red?: on the use of color in slides. *T. Shipley* . . . . . 823

**Reviews**

Experimental gastric mucosal injury: laboratory models reveal mechanisms of pathogenesis and new therapeutic strategies. *G. B. Glavin and S. Szabo* . . . . . 825

Subtypes of α£- and α1-adrenergic receptors. *D. B. Bylund* . . . . . 832

Molecular mimicry: a mechanism for autoimmune injury. *L. A. Barnett and R. S. Fujinami* . . . . . 840

Diversity of structure, signaling and regulation within the family of muscarinic cholinergic receptors. *M. M. Hosey* . . . . . 845

Electric power, pineal function, and the risk of breast cancer. *R. G. Stevens, S. Davis, D. B. Thomas, L. E. Anderson, and B. W. Wilson* . . . . . 853

Proteoglycans: many forms and many functions. *T. E. Hardingham and A. J. Fosang* . . . . . 861

Protein-protein interactions at a DNA replication fork: bacteriophage T4 as a model. *N. G. Nossal* . . . . . 871

Bone structure: from angstroms to microns. *S. Weiner and W. Traub* . . . . . 879

Angiogenesis in the female reproductive system. *L. P. Reynolds, S. D. Killilea, and D. A. Redmer* . . . . . 886

Calcium and the heart: exchange at the tissue, cell, and organelle levels. *G. A. Langer* . . . . . 893

**Research Communications**

Relationship of resistance to oxygen free radicals to CuZn-superoxide dismutase activity in transgenic, transfected, and trisomic cells. *T.-T. Huang, E. J. Carlson, S. A. Leadon, and C. J. Epstein* . . . 903

Interleukin 1 protects hair follicles from cytarabine (ARA-C)-induced toxicity in vivo and in vitro. J. J. Jimenez, M. E. Sawaya, and A. A. Yunis . . . 911

Volatile anesthetics gate a chloride current in postnatal rat hippocampal neurons. *J. Yang, K. E. Isenberg, and C. F. Zorumski* . . . 914

Role of $[Ca^{2+}]_i$ in induction of c-*fos*, c-*jun*, and c-*myc* mRNA in rat PTE after oxidative stress. *A. Maki, I. K. Berezesky, J. Fargnoli, N. J. Holbrook, and B. F. Trump* . . . 919

**50 Years Ago**

Advances and Controversies in Blood Coagulation: a 50-year Retrospective. K. M. Brinkhous . . . 925

**Calendar** . . . 927

**BookList** . . . 928

**Employment Opportunities** . . . 929

**New Products & Literature** . . . 933

Numbers 4 and 5 - Abstracts

Number 6, MARCH 1992

**Editorial**

Stand Up and Be Counted. *C. L. Reinisch* . . . 2255

**News & Features**

Preview Highlights, 1992 FASEB Meeting . . . 2256

In Brief . . . 2270

Special Feature: Cooking and trimming by scientific giants. *I. M. Klotz* . . . 2271

**Reviews**

Glycogen phosphorylase: control by phosphorylation and by allosteric effectors. *L. N. Johnson* . . . 2274

Magnetic field effects on pineal indoleamine metabolism and possible biological consequences. *R. J. Reiter and B. A. Richardson* . . . 2283

The nuclear pore: at the crossroads. *J. A. Hanover* . . . 2288

Platelet-activating factor receptor and signal transduction mechanisms. *S. D. Shukla* . . . 2296

Repair of DNA containing *O*%-alkylguanine. *A. E. Pegg and T. L. Byers* . . . 2302

Neuroactive steroids. *S. M. Paul and R. H. Purdy* . . . 2311

Rhodopsin and phototransduction: a model system for G protein-linked receptors. *P. A. Hargrave and J. H. McDowell* . . . 2323

Receptor tyrosine kinases. *D. L. Cadena and G. N. Gill* . . . 2332

Radiation burdens for humans on prolonged exomagnetospheric voyages. *F. D. Moore* . . . 2338

HLA and maternal-fetal recognition. *J. S. Hunt and H. T. Orr* . . . 2344

**Research Communications**

Modification of subcellular organelles in pressure-overloaded heart by etomoxir, a carnitine palmitoyl-transferase I inhibitor. *H. Rupp, V. Elimban, and N. S. Dhalla* . . . 2349

Endothelin induces vascular and mucosal lesions, enhances the injury by HCl/ethanol, and the antibody exerts gastroprotection. *R. E. Morales, B. R. Johnson, and S. Szabo* . . . 2354

**50 Years Ago**

Role of Amino Acids in Human Nutrition. *J. E. Johnson and W. J. Haines* . . . 2361

**Letter to the Editor**

Aromatic Palindrome Motif in Prion Proteins. *E. Sulkowski* . . . 2363

**Calendar** . . . 2364

**BookList** . . . 2365

**Employment Opportunities** . . . 2366

**New Products & Literature** . . . 2377

Number 7, APRIL 1992

**Editorial**

Opportunities for Basic Scientists in Disease-oriented Research. *M. E. Lamm* . . . 2381

**News & Features**

In Brief . . . 2382

Special Feature: The National Institutes of Health is going high-tech in peer review. *M. A. Khan, J. W. Wortham, N. Watzman, and J. G. Green* . . . 2384

**Reviews**

Ethanol and signal transduction in the liver. *J. B. Hoek, A. P. Thomas, T. A. Rooney, K. Higashi, and E. Rubin* . . . 2386

Hyaluronan. *T. C. Laurent and J. R. E. Fraser* . . . 2397

Lactate production in adipose tissue: a regulated function with extra-adipose implications. *M. DiGirolamo, F. D. Newby, and J. Lovejoy* . . . 2405

Dopaminergic mechanisms in the pathogenesis of schizophrenia. *M. Goldstein and A. Y. Deutch* . . . 2413

Antibody engineering: the use of *Escherichia coli* as an expression host. *E. S. Ward* . . . 2422

Memory and anergy: challenges to traditional models of T lymphocyte differentiation. *M. K. Jenkins and R. A. Miller* . . . 2428

Na,K-ATPase function in alternating electric fields. *M. Blank* . . . 2434

Enzymatic and nonenzymatic cross-linking of collagen and elastin. *K. Reiser, R. J. McCormick, and R. B. Rucker* . . . 2439

Apoptosis: a different type of cell death. *L. E. Gerschenson and R. J. Rotello* . . . 2450

Modulation of venular microvessel permeability by calcium influx into endothelial cells. *F. E. Curry* . . . 2456

**Research Communications**

Inhibition of elevated hepatic glutathione abolishes copper deficiency cholesterolemia. *S. Kim, P. Y. Chao, and K. G. D. Allen* . . . 2467

Urinary mercury and administration of 2,3-dimercaptopropane-1-sulfonic acid: correlation with dental amalgam score. *H. V. Aposhian, D. C. Bruce, W. Alter, R. C. Dart, K. M. Hurlbut, and M. M. Aposhian* . . . 2472

Sex hormone-binding globulin, androgen-binding protein, and vitamin K-dependent protein S are homologous to laminin A, merosin, and *Drosophila crumbs* protein. *D. R. Joseph and M. E. Baker* . . . 2477

Interleukin-1 (IL-1) receptor blockade reduces endotoxin and *Borrelia burgdorferi*-stimulated IL-8 synthesis in human mononuclear cells. *R. Porat, D. D. Poutsiaka, L. C. Miller, E. V. Granowitz, and C. A. Dinarello.* . . . . . 2482

**50 Years Ago**

1940s Studies of Nicotinic Acid Metabolism and the Relationship of B-Vitamin Utilization to Protein Level in the Diet. *H. P. Sarett* . . . . . 2487

**Letters to the Editor**

Animal Rights/Liberation Philosophy. *M. Cramer* . . . . . 2489
*M. F. Kraushar* . . . . . 2489
*R. R. Ballina* . . . . . 2490
*A. F. Alberti* . . . . . 2490
Authors' Replies . . . . . 2490

**Calendar** . . . . . 2493

**BookList** . . . . . 2499

**Employment Opportunities** . . . . . 2500

**New Products & Literature** . . . . . 2507

Number 8, MAY 1992

**Editorial**

The Economic Benefits of Biomedical Research Support. *B. S. Coller* . . . . . 2509

**News & Features**

In Brief . . . . . 2510

Special Feature: The ras superfamily of GTP-binding proteins: guidelines on nomenclature. *R. A. Kahn, C. J. Der, and G. M. Bokoch* . . . . . 2512

**Reviews**

Phosphorylation of ligand-gated ion channels: a possible mode of synaptic plasticity. *S. L. Swope, S. J. Moss, C. D. Blackstone, and R. L. Huganir* . . . . . 2514

Control of transcription activation by steroid hormone receptors. *H. Gronemeyer* . . . . . 2524

Biochemistry and physiology of n-3 fatty acids. *W. E. M. Lands* . . . 2530

Endogenous retroviruses: potential etiologic agents in autoimmunity. *A. M. Krieg, M. F. Gourley, and A. Perl* . . . . . 2537

Protein folding and protein refolding. *R. Seckler and R. Jaenicke* . . . . 2545

Immunoglobulin gene expression only in the right cells at the right time. *L. A. Eckhardt* . . . . . 2553

Regulation of blood coagulation by the protein C system. *F. J. Walker and P. J. Fay* . . . . . 2561

Connections: heart disease, cellular electrophysiology and ion channels. *R. E. Ten Eick, D. W. Whalley, and H. H. Rasmussen* . . . 2568

Signal transduction from cell surface to nucleus in development and disease. *M. Karin* . . . . . 2581

Cytokine regulation of endothelial cell function. *A. Mantovani, F. Bussolino, and E. Dejana* . . . . . 2591

**Research Communications**

Dietary fatty acid thresholds and cholesterolemia. *K. C. Hayes and P. Khosla* . . . . . 2600

Antibodies against crystals. *M. Kam, D. Perl-Treves, D. Caspi, and L. Addadi* . . . . . 2608

**50 Years Ago**

Role of Amino Acids in Human Nutrition. *J. E. Johnson and W. J. Haines* . . . . . 2361

**Letter to the Editor**

Aromatic Palindrome Motif in Prion Proteins. *E. Sulkowski* . . . . 2363

**Calendar** . . . . . 2364

**BookList** . . . . . 2365

**Employment Opportunities** . . . . . 2366

**New Products & Literature** . . . . . 2377

Number 9, JUNE 1992

**Editorial**

Monitoring the Environment. *J. Salánki* . . . . . 2633

**News & Features**

In Brief . . . . . 2635

Special Feature: Women Bioscientists in the 1990s. . . . . 2637

**Reviews**

Supramolecular organization of extracellular matrix glycosaminoglycans, in vitro and in the tissues. *J. E. Scott* . . . . . 2639

Mediators of communication and adaptation in the neuroendocrine and immune systems. *E. J. Goetzl and S. P. Sreedharan* . . . . . 2646

Endothelin-converting enzymes. *T. J. Opgenorth, J. R. Wu-Wong, and K. Shiosaki* . . . . . 2653

ATP-dependent bacterial transporters and cystic fibrosis: analogy between channels and transporters. *G. F.-L. Ames and H. Lecar* . . . 2660

Lymphocytes and low-frequency electromagnetic fields. *R. Cadossi, F. Bersani, A. Cossarizza, P. Zucchini, G. Emilia, G. Torelli, and C. Franceschi* . . . . . 2667

Regulation of antioxidant enzymes. *E. D. Harris* . . . . . 2675

Pertussis toxin and target eukaryotic cells: binding, entry, and activation. *H. R. Kaslow and D. L. Burns* . . . . . 2684

The renewal and differentiation of hemopoietic stem cells. *D. Zipori* . . . . . 2691

Does chemically induced hepatocyte proliferation predict liver carcinogenesis? *R. L. Melnick* . . . . . 2698

Role of primary response genes in generating cellular responses to growth factors. *S. B. McMahon and J. G. Monroe* . . . . . 2707

**Research Communication**

Targeted accumulation of polyethylene glycol-coated immunoliposomes in infarcted rabbit myocardium. *V. P. Torchilin, A. L. Klibanov, L. Huang, S. O'Donnell, N. D. Nossiff, and B. A. Khaw* . . . . . 2716

Regulation of phosphatidic acid phosphohydrolase activity during stimulation of human polymorphonuclear leukocytes. *A. P. Truett III, S. B. Bocckino, and J. J. Murray* . . . . . 2720

Long-term culture of normal human colonic epithelial cells in vitro. *A. Baten, K. Sakamoto, and A. M. Shamsuddin* . . . . . 2726

Human T lymphocyte cAMP-dependent protein kinase: subcellular distributions and activity ranges of type I and type II isozymes. *P. Hasler, J. J. Moore, and G. M. Kammer* . . . . . 2735

Inhibition of voltage-gated $Ca^{2+}$ entry into GHß and chromaffin cells by imidazole antimycotics and other cytochrome P450 blockers. *C. Villalobos, R. Fonteriz, M. G. Lopez, A. G. Garcia, and J. Garcia-Sancho* . . . . . 2742

**50 Years Ago**

A reminiscence of the work of Louis N. Katz. *A. M. Katz* . . . . . 2748

**Calendar** . . . . . 2750

**BookList** . . . . . 2751

**Employment Opportunities** . . . . . 2752

**New Products & Literature** . . . . . 2757

Number 10, JULY 1992

**News & Features**

In Brief . . . . . 2759

**Molecular Biology: Impact on Human Disease—Overview**

A revolution in medicine like no other. *R. E. Pyeritz* . . . . . 2761

**Reviews**

Assessing the underlying pattern of human germline mutations: lessons from the factor IX gene. *S. S. Sommer* . . . . . 2767

Cystic fibrosis transmembrane conductance regulator and the etiology and pathogenesis of cystic fibrosis. *I. McIntosh and G. R. Cutting* . . . . . 2775

Progressing toward a molecular description of colorectal cancer development. *E. R. Fearon and P. A. Jones* . . . . . 2783

Leber's hereditary optic neuropathy: a model for mitochondrial neurodegenerative diseases. *M. D. Brown, A. S. Voljavec, M. T. Lott, I. MacDonald, and D. C. Wallace* . . . . . 2791

Genetic factors in the etiology and pathogenesis of autoimmunity. *D. A. Carson* . . . . . 2800

The diffusion of new genetic tests for predicting disease. *N. A. Holtzman* . . . . . 2806

Ethical implications of screening asymptomatic individuals. *N. Fost* . . . . . 2813

Presymptomatic testing for late-onset genetic disorders: lessons from Huntington's disease *D. M. Ball and P. S. Harper* . . . . . 2818

The Tiresias complex: Huntington's disease as a paradigm of testing for late-onset disorders. *N. S. Wexler* . . . . . 2820

**Research Communications**

The recombinant congenic strains for analysis of multigenic traits: genetic composition. *P. C. Groot, C. J. A. Moen, W. Dietrich, J. P. Stoye, E. S. Lander, and P. Demant* . . . . . 2826

Immune tolerance to a defined heterologous antigen after intrasplenic hepatocyte transplantation: implications for gene therapy. *R. P. Vemuru, A. Davidson, E. Aragona, J. R. Chowdhury, R. D. Burk, and S. Gupta.* . . . . . 2836

Dynamic changes in HIV-1 quasispecies from azidothymidine (AZT)-treated patients. *J. Wahlberg, J. Albert, J. Lundeberg, S. Cox, B. Wahren, and M. Uhlén* . . . . . 2843

Intrathymic implants of genetically modified fibroblasts. *A. M. P. Behara, A. J. Westcott, and P. L. Chang* . . . . . 2853

Ataxia-telangiectasia: linkage analysis of chromosome 11q22-23 markers in Turkish families. *O. Sanal, E. Lange, M. Telatar, E. Sobel, J. Salazar-Novak, F. Ersoy, A. Morrison, P. Concannon, A. Tolun, and R. A. Gatti.* . . . . . 2848

Mechanisms of inherited deficiencies of multiple UDP-glucuronosyltransferase isoforms in two patients with Crigler-Najjar syndrome, type I. *P. J. Bosma, J. R. Chowdhury, T.-J. Huang, P. Lahiri, R. P. J. Oude Elferink, H. H. G. Van Es, M. Lederstein, P. F. Whitington, P. L. M. Jansen, and N. R. Chowdhury* . . . . . 2859

Molecular strategies in genetic diagnosis of transthyretin-related hereditary amyloidosis. *A. Ferlini, S. Fini, F. Salvi, M. C. Patrosso, P. Vezzoni, and A. Forabosco.* . . . . . 2864

**50 Years Ago**

Genetics 50 Years Ago. *J. F. Crow* . . . . . 2867

**Letters to the Editor**

On the Use of Color Slides. *W. Mitzner* . . . . . 2870

Author's Reply. *T. Shipley* . . . . . 2870

Effects of Radiation on Humans during Prolonged Spaceflight. *R. D. Reynolds* . . . . . 2870

Author's Reply. *F. D. Moore* . . . . . 2871

**Calendar** . . . . . 2872

**BookList** . . . . . 2877

**Employment Opportunities** . . . . . 2878

**New Products & Literature** . . . . . 2883

Number 11, AUGUST 1992

**Editorial**

Fractures in Flexner's Foundation: Recommended Changes in Medical Education. *R. W. Estabrook* . . . . . 2887

**News & Features**

In Brief . . . . . 2889

Special Feature: Contemporary topics in immunology: approaches to immunotherapy emerging from basic research. *J. F. Albright and J. J. Oppenheim* . . . . . 2890

**Reviews**

Extracellular matrix and the regulation of lung development and repair. *S. E. McGowan* . . . . . 2895

Glucose and diabetic vascular disease. *N. B. Ruderman, J. R. Williamson, and M. Brownlee* . . . . . 2905

Roles of receptor tyrosine kinases in *Drosophila* development. *B-Z. Shilo* . . . . . 2915

The heart and control of renal excretion: neural and endocrine mechanisms. *T. V. Peterson and B. A. Benjamin* . . . . . 2923

Signal transduction in atherosclerosis: integration of cytokines and the eicosanoid network. *D. P. Hajjar and K. B. Pomerantz* . . . . . 2933

DNA adducts in humans as dosimeters of exposure to environmental, occupational, or dietary genotoxins. *H. A. J. Schut and K. T. Shiverick* . . . . . 2942

Therapeutic potential of modulating potassium currents in the diseased myocardium. *J. J. Lynch, Jr., M. C. Sanguinetti, S. Kimura, and A. L. Basset.* . . . . . 2952

The leaks and slips of bioenergetic membranes. *G. C. Brown* . . . . . 2961

**Research Communications**

Bone acidic glycoprotein 75 inhibits resorption activity of isolated rat and chicken osteoclasts. *M. Sato, W. Grasser, S. Harm, C. Fullenkamp, and J. P. Gorski* . . . . . 2966

Poliovirus induces indoleamine-2,3-dioxygenase and quinolinic acid synthesis in macaque brain. *M. P. Heyes, K. Saito, D. Jacobowitz, S. P. Markey, O. Takikawa, and J. H. Vickers* . . . . . 2977

Production of a monoclonal antibody to an attachment protein derived from human cementum. *H. Arzate, S. W. Olson, R. C. Page, A. M. Gown, and A. S. Narayanan.* . . . . . 2990

Platelet-derived growth factor AA homodimer is the predominant isoform in human platelets and acute human wound fluid. *Y. Soma, V. Dvonch, and G. R. Grotendorst* . . . 2996

Promotion of murine B cell differentiation by 2-mercaptoethanol in contrast to glutathione. *M. Mattingly, D. Chakrabarti, and S. K. Ghosh* . . . 3002

Spatial learning impairment in a murine model of AIDS. *Y. Sei, P. K. Arora, P. Skolnick, and I. A. Paul* . . . 3008

**50 Years Ago**

The Path from Acetylphosphate to Acetyl CoA. *H. A. Barker* . . . 3014

**Letters to the Editor**

Electric Power and Breast Cancer. *J. R. Jauchem* . . . 3016
Author's Reply. *R. G. Stevens* . . . 3016

**Calendar** . . . 3018

**BookList** . . . 3019

**Employment Opportunities** . . . 3020

**New Products & Literature** . . . 3025

Number 12, SEPTEMBER 1992

**Editorial**

Reform of the National Institutes of Health. *T. S. Edgington* . . . 3027

**News & Features**

In Brief . . . 3028
Special Feature: The Disease Defense Buildup. *M. O. Hatfield* . . . 3030

**Biogenesis**

Control, bioenergetics, and adaptation in health and disease: noninvasive biochemistry from nuclear magnetic resonance. *G. K. Radda* . . . 3032

**Reviews**

Studies of intestinal stem cells using normal, chimeric, and transgenic mice. *J. I. Gordon, G. H. Schmidt, and K. A. Roth* . . . 3039

Nitric oxide as a secretory product of mammalian cells. *C. Nathan* . . . 3051

Function of the c-Myc oncoprotein. *G. J. Kato and C. V. Dang* . . . 3065

Dehydroepiandrosterone: the "missing link" between hyperinsulinemia and atherosclerosis? *J. E. Nestler, J. N. Clore, and W. G. Blackard* . . . 3073

Electrolyte transport in the epithelium of pulmonary segments of normal and cystic fibrosis lung. *C. M. Liedtke* . . . 3076

Inositol phosphates and $Ca^{2+}$ entry: toward a proliferation or a simplification. *R. F. Irvine* . . . 3085

Excitation-contraction coupling in the heart: the state of the question. *M. D. Stern and E. G. Lakatta* . . . 3092

**Research Communications**

Elevation of lung glutathione by oral supplementation of L-2-oxothiazolidine-4-carboxylate protects against oxygen toxicity in protein-energy malnourished rats. *C. G. Taylor, P. F. Bauman, B. Sikorski, and T. M. Bray* . . . 3101

A parkinsonian syndrome induced in the goldfish by the neurotoxin MPTP. *H. B. Pollard, K. Dhariwal, O. M. Adeyemo, C. J. Markey, H. Caohuy, M. Levine, S. Markey, and M. B. H. Youdim* . . . 3108

**Methodology**

Culture of bovine pulmonary artery endothelial cells on Gelfoam blocks. *M. Centra, R. E. Ratych, G.-L. Cao, J. Li, E. Williams, R. M. Taylor, and G. M. Rosen* . . . 3117

**50 Years Ago**

DOPA: Then and Now. *R. J. Bing* . . . 3122

**Calendar** . . . 3123

**BookList** . . . 3124

**Employment Opportunities** . . . 3125

**New Products & Literature** . . . 3130

Number 13, OCTOBER 1992

**Editorial**

Biomedical Research Funding: View of the National Caucus of Basic Biomedical Science Chairs. *H. G. Mandel, R. L. Woosley, and E. S. Vesell* . . . 3133

**News & Features**

In Brief . . . 3135

Special Features:

Biophysics of the nineties: on the road to Budapest. *M. Brunori and H. Eisenberg* . . . 3136

Point—Counterpoint:

Creating our children's NIH. *B. Healy* . . . 3138

Basic research: the lifeline of medicine. *A. Kornberg* . . . 3143

**Reviews**

Gene expression: nutrient control of pre- and posttranscriptional events. *S. D. Clarke and S. Abraham* . . . 3146

Aerobic fermentation of glucose by trypanosomatids. *J. J. Cazzulo* . . . 3153

Lipoprotein receptors, plasma cholesterol metabolism, and the regulation of cellular free cholesterol concentration. *C. J. Fielding* . . . 3162

p53: the ultimate tumor suppressor gene? *M. Oren* . . . 3169

Electromagnetic field effects on cells of the immune system: the role of calcium signaling. *J. Walleczek* . . . 3177

mRNA degradation in procaryotes. *C. P. Ehretsmann, A. J. Carpousis, and H. M. Krisch* . . . 3186

Biochemistry of carbohydrate-protein interaction. *Y. C. Lee* . . . 3193

Mechanisms of lead neurotoxicity, or looking beyond the lamppost. *E. K. Silbergeld* . . . 3201

Membrane immunoglobulin and its accomplices: new lessons from an old receptor. *J. C. Cambier and K. S. Campbell* . . . 3207

**50 Years Ago**

On the Initiation of Glycogen and Starch Synthesis. *W. J. Whelan* . . . 3218

**Calendar** . . . 3220

**BookList** . . . 3224

**Employment Opportunities** . . . 3225

**New Products & Literature** . . . 3227

Number 14, NOVEMBER 1992


**Editorial**

Common Dollars and Sense. *T. S. Edgington* . . . . . 3231

**News & Features**

In Brief . . . . . 3232

Special Feature:

Can Indirect Cost Funding Be Improved? *M. P. Sheetz* . . . . . 3234

Resolution of the Indirect Cost Issue *R. M. Rosenzweig* . . . . . 3236

**Reviews**

Regulation of glucose transport in skeletal muscle. *R. J. Barnard and J. F. Youngren* . . . . . 3238

A two-signal model for regulation of immunoglobulin isotype switching. *J. Purkerson and P. Isakson* . . . . . 3245

Regulation of transferrin gene expression. *M. M. Zakin* . . . . . 3253

SAPA/*trans*-sialidase and cruzipain: two antigens from *Trypanosoma cruzi* contain immunodominant but enzymatically inactive domains *J. J. Cazzulo and A. C. C. Frasch* . . . . . 3259

Structural basis of antigenic specificity and design of new vaccines. *R. Arnon and M. H. V. Van Regenmortel* . . . . . 3265

Tyrphostins: tyrosine kinase blockers as novel antiproliferative agents and dissectors of signal transduction. *A. Levitzki* . . . . . 3275

Receptor tyrosine kinase substrates: *src* homology domains and signal transduction. *G. Carpenter* . . . . . 3283

Thrombospondins: structure and regulation of expression. *P. Bornstein* . . . . . 3290

Transcription by RNA polymerase II: initiator-directed formation of transcription-competent complexes. *L. Weis and D. Reinberg* . . . . 3300

**Research Communication**

Glucocorticoid regulation of phenylethanolamine *N*-methyltransferase in vivo. *D. L. Wong, A. Lesage, B. Siddall, and J. W. Funder* . . . . 3310

**50 Years Ago**

Vitamin C and Serendipity, Fifty Years Ago. *K. H. Beyer, Jr.* . . . 3316

**Calendar** . . . . . 3318

**BookList** . . . . . 3319

**Employment Opportunities** . . . . . 3320

**New Products & Literature** . . . . . 3323


Number 15, DECEMBER 1992


**Editorial**

Thoughts Concerning Women in Science. *S. E. Leeman and P. L. Munson* . . . . . 3327

**Tribute**

John T. Edsall. *C. M. Kay* . . . . . 3328

**News & Features**

In Brief . . . . . 3329

**Reviews**

Cell-specific expression of cytosolic phosphoenolpyruvate carboxykinase in transgenic mice. *E. G. Beale, D. E. Clouthier, and R. E. Hammer* . . . . . 3330

Mechanisms of excitotoxicity in neurologic diseases. *M. F. Beal* . . . . . 3338

α1-Macroglobulin, a multifunctional binding protein with targeting characteristics. *W. Borth* . . . . . 3345

New insights into chromatin function in transcriptional control. *A. P. Wolffe* . . . . . 3354

Complexity of FGF receptors: genetic basis for structural diversity and functional specificity. *D. Givol and A. Yayon* . . . . . 3362

Endowing T cells with antibody specificity using chimeric T cell receptors. *G. Gross and Z. Eshhar* . . . . . 3370

Carnitine function and requirements during the life cycle. *C. J. Rebouche* . . . . . 3379

Cytokine receptors and signal transduction. *T. Taga and T. Kishimoto* . . . . . 3387

Forces involved in the assembly and stabilization of membrane proteins. *W. A. Cramer, D. M. Engelman, G. von Heijne, and D. C. Rees* . . . . . 3397

The Src family of tyrosine protein kinases in hemopoietic signal transduction. *J. B. Bolen, R. B. Rowley, C. Spana, and A. Y. Tsygankov* . . . . . 3403

**Erratum** . . . . . 3409

**Research Communication**

Structural and evolutionary relationships among the immunophilins: two ubiquitous families of peptidylprolyl *cis-trans* isomerases. *C. C. Trandinh, G. M. Pao, and M. H. Saier, Jr.* . . . . . 3410

**Acknowledgment** . . . . . 3421

**50 Years Ago**

Molecules and Microbes of Merit—50 Years Ago and Now. *I. C. Gunsalus* . . . . . 3423

**Letters to the Editor**

Fractures in Flexner's Foundation: Recommended Changes in Medical Education. *L. G. Navar* . . . . . 3426

*C. D. Thron* . . . . . 3427

Author's Reply. *R. A. Estabrook* . . . . . 3427

**Calendar** . . . . . 3428

**BookList** . . . . . 3429

**Employment Opportunities** . . . . . 3430

**New Products & Literature** . . . . . 3433

**Author Index to Volume 6** . . . . . 3437

**Subject Index to Volume 6** . . . . . 3439